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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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Stephane Bedard

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EXAMINER

KAPLAN, HAL IRA

ART UNIT	PAPER NUMBER
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2836

DATE MAILED: 05/03/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No. 10/743,231	Applicant(s) BEDARD ET AL.	
Examiner Hal I. Kaplan	Art Unit 2836	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) Responsive to communication(s) filed on 22 December 2003 and 17 May 2004.
- 2a) This action is **FINAL**.
- 2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) Claim(s) 1-18 is/are pending in the application.
4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) Claim(s) _____ is/are allowed.
- 6) Claim(s) 1-3 and 5-16 is/are rejected.
- 7) Claim(s) 4, 17 and 18 is/are objected to.
- 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on 22 December 2003 and 17 May 2004 is/are: a) accepted or b) objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) All b) Some * c) None of:
1. Certified copies of the priority documents have been received.
2. Certified copies of the priority documents have been received in Application No. _____.
3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) Notice of References Cited (PTO-892)
- 2) Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 2/23/04.
- 4) Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) Notice of Informal Patent Application (PTO-152)
- 6) Other: _____

DETAILED ACTION

Specification

1. The disclosure is objected to because of the following informalities: Page 2, lines 9 and 11-15 contain the word "said". As the purpose of the specification is to enable one of ordinary skill in the art to make and/or use the device without undue experimentation, and one of ordinary skill in the art would not understand the terms normally used in patent claims, such as "means" and "said", they should be removed. Page 3, line 22 contains the word "requirement". It appears this should be "required". Page 3, lines 25-26; page 6, lines 2-3; page 7, lines 6 and 27-28; page 9, lines 8-9; and page 14, lines 15-16 contain the phrase "but not limiting the current description to the following model". It appears this should read "but is not limited to". Page 3, line 26 contains the phrase "Motion Control". It appears this should be "Motion Control.". Page 4, line 10 contains the phrase "PWM is". It appears this should be "a PWM signal is". Page 4, line 17 contains the phrase "current envelop". It appears this should be "current". Page 4, line 18 contains the phrase "gait or amputees movement". It appears this should read "amputee's gait or movement". Page 4, line 22 contains the phrase "demands, the power supply". It appears this should read "demands. The power supply".

Page 5, line 7 contains the phrase "battery 100 and superconductor 200and". It appears this should read "battery (100) and super capacitor (200), and". Page 6, line 8 contains the phrase "10C, where 1C mA =". "C" and "C mA" should be written out before being used as abbreviations. Page 7, line 5 contains the abbreviation "PCMs".

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This should be written out before being used as an abbreviation. Page 7, lines 16-18 contain the phrase "the PCM ... returns to bypass mode ... cell group ... reaches its protection". It appears this should read "the PCMs ... return to bypass mode ... cell groups ... reach their protection". Page 7, line 21 and page 8, line 8 contain the phrase "used in order to". It appears this should be "used to". Page 7, line 25 contains the word "element". It appears this should be "elements". Page 7, line 26 contains the phrase "in-rush high currents". It appears this should read "high frequency in-rush currents". Page 8, line 4 contains the word "were". It appears this should be "where". Page 8, line 12 contains the phrase "higher frequency in-rush high". It appears this should read "high frequency in-rush". Page 8, line 17 contains the phrase "capacity is 2.82 mF". It appears this should read "capacity of 2.82 mF". Page 8, line 20 contains the word "increase". It appears this should be "increased".

Page 10, line 14 contains the word "exceeds". It appears this should be "exceed". Page 10, line 20 contains the phrase "a fast in-rush". It appears this should be "fast in-rush". Page 10, lines 23-24 are unclear to the examiner because time and power are different quantities. Page 12, lines 17, 20, 23, and 28 contain the word "Vbat(acceptable)". It appears this should be "MinVbat(acceptable)" (see Figure 7, steps 932 and 936). Page 12, line 26 contains the word "mechanisms". It appears this should be "mechanism's". Page 14, line 3 contains the word "his". It appears this should be "this". Page 14, line 4 contains the word "mechanisms". It appears this should be "mechanism's". Page 14, line 8 contains the word "eliminated". It appears this should be "eliminate". Page 14, line 22 contains the phrase "end of autonomy

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time". The specification does not define "autonomy time", and it is not clear to the examiner what this means. Page 15, line 3 contains the phrase "in operation therefore". It appears this should read "in operation". Page 15, lines 16-17 contain the phrase "super conductor (200)". It appears this should be "super capacitor (200)".

A legend such as "like reference numerals refer to the same parts throughout the specification and drawings" should be added to the specification.

Appropriate correction is required.

Drawings

2. The drawings were received on December 22, 2003 and May 17, 2004. These drawings are accepted.

Claim Objections

3. Claims 6, 7, 15, 16, and 18 are objected to because of the following informalities: Claim 6, line 2 contains the word "other". It appears this should be "another". Claim 7, lines 2-3 contain the phrase "limited to match". It appears this should be "limited to match". Claim 15, line 3 contains the word "associate". It appears this should be "associated". Claim 16, line 5 contains the phrase "said load". It appears this should be "said load.". Claim 18, line 3 contains the phrase "storage elements". It appears this should be "storage elements.". Appropriate correction is required.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

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(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

5. Claims 1-3, 5-7, 9, 12, and 16 are rejected under 35 U.S.C. 102(e) as being anticipated by the US patent application publication of Turner et al. (2004/0263127).

As to claim 1, Turner, drawn to a control circuit, discloses an electrical power supply for providing electrical power to a load, the power supply comprising: a plurality of energy storage elements (113,117) each having a different operating characteristic and connected in an electrical circuit to the load (102) (see paragraph 39, lines 10-14, paragraph 40, lines 1-2, and paragraph 42, lines 1-3); and a circuit element (any circuit element of controller 115 - see Figures 1 and 2) interposed between at least one of the storage elements (117) and the load (102) and operable to segregate the one of the energy storage elements (117) therefrom, the circuit element being selected to match supply of energy to the load (102) to the characteristics of the storage elements (113,117) (see paragraph 39, lines 10-14 and Figure 1).

As to claim 2, the storage elements (113,117) are connected in parallel and the circuit element (115) is interposed between them (see Figure 1).

As to claim 3, the power supply of Turner includes a power monitoring unit (118) to monitor one of the energy storage elements (117) and vary the demand thereon from the load (102) (see paragraph 40, lines 2-4 and paragraph 43, lines 1-11).

As to claim 5, the power monitoring unit (118) is operable to disconnect the one energy storage element (117) from the circuit upon attainment of predetermined conditions (see paragraph 44, lines 1-8).

As to claim 6, one energy storage element (117) is operable to replenish energy in another of the energy storage elements (113) (see paragraph 39, lines 10-12).

As to claim 7, power supply from the one storage element (117) to the other storage element (113) is limited to match the characteristics of the one storage element (117) (see paragraph 39, lines 10-14)

As to claim 9, the storage elements include at least one battery cell (117) (see paragraph 42, lines 1-3).

As to claim 12, the storage elements include at least one super capacitor (113) (see paragraph 40, lines 1-2).

As to claim 16, supply of power from the energy storage elements (113,117) to the load (102) is controlled by a power drive controller (115) operable to match the current requirements from the storage elements (113,117) with requirements of the load (102) (see paragraph 39, lines 10-14).

6. Claims 1, 2, 8, 12, 13, and 14 are rejected under 35 U.S.C. 102(b) as being anticipated by the US patent of Weimer et al. (5,982,156).

As to claim 1, Weimer, drawn to feed-forward control of aircraft bus DC boost converter, discloses an electrical power supply for providing electrical power to a load, the power supply comprising: a plurality of energy storage elements (216,C) each having a different operating characteristic and connected in an electrical circuit to the

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load (200); and a circuit element (212) interposed between at least one of the storage elements (216) and the load (200) and operable to segregate the one of the energy storage elements (216) therefrom, the circuit element being selected to match supply of energy to the load (200) to the characteristics of the storage elements (216,C) (see column 8, lines 13-23, column 10, lines 27-31, and Figure 2).

As to claim 2, the storage elements (216,C) are connected in parallel and the circuit element (212) is interposed between them (see Figure 2).

As to claim 8, the circuit element is an inductor (212) (see column 8, lines 13-23, column 10, lines 29-30, and Figure 2).

As to claim 12, the energy storage elements include at least one super capacitor (216) (see column 10, line 30).

As to claim 13, the energy storage elements include at least one electrolytic capacitor (C) (see Figure 2).

As to claim 14, the power supply of Weimer further comprises at least one in-rush current limiter (D) (see column 4, lines 49-52 and Figure 2).

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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8. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

9. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

10. Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Turner in view of Weimer.

As to claim 10, Turner discloses all of the claimed features, as set forth above, except for a diode connected between the at least one battery cell and the load. Weimer discloses a diode connected between a power storage element (216) and a load (200). It would have been obvious to one of ordinary skill in the art, at the time of the invention, to connect a diode between the battery of Turner and the load, because it

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is well known in the art to use a diode to prevent reverse current flow into a power source.

11. Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Turner in view of the US patent of Lee et al. (6,451,481).

As to claim 11, Turner discloses all of the claimed features, as set forth above, except for the at least one battery cell being a Lithium Polymer cell. Lee, drawn to a lithium polymer battery, discloses a Lithium Polymer cell (20) (see column 3, lines 37-42, column 8, lines 10-50, and Figure 2). It would have been obvious to one of ordinary skill in the art, at the time of the invention, to use a Lithium Polymer battery in the circuit of Turner because a Lithium Polymer battery would be safer and more efficient, and attention has recently been paid to Lithium Polymer batteries as next generation batteries.

12. Claim 15 is rejected under 35 U.S.C. 103(a) as being unpatentable over Turner in view of the US patent of Upadhyay et al. (5,998,930).

As to claim 15, Turner discloses all of the claimed features, as set forth above, except for a shunt controller connected to the bus. Upadhyay, drawn to an electronic ballast with two-step boost converter and method, discloses a power supply comprising a shunt controller (300) connected to the main bus, the shunt controller (300) having an associated resistor (328) and an associated switch (324); wherein the shunt controller (300) monitors the power supply's voltage level and closes its associated switch (324) in response to a preset maximum voltage level (V_{ON}) being attained, the closing of the shunt controller's associated switch (324) resulting in the dissipation of energy into its

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associated resistor (328) (see column 4, lines 34-44 and Figure 4). It would have been obvious to one of ordinary skill in the art, at the time of the invention, to build the circuit of Turner with a shunt controller with an associated resistor and switch as back-up protection in case of failure of the controller, because it is well known in the art to use a shunt controller for protection against an over current or over voltage condition.

Allowable Subject Matter

13. Claims 4, 17, and 18 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

14. The following is a statement of reasons for the indication of allowable subject matter:

Claim 4 contains allowable subject matter because the maximum load current in Turner is determined by the power drive controller, not the power monitoring unit, and there is no suggestion or motivation to combine a power monitoring unit that determines the maximum load current with a power drive controller that also determines the maximum load current, absent applicant's disclosure.

Claims 17-18 contain allowable subject matter because none of the prior art of record discloses a power monitoring unit which matches the requirements of a power drive controller to available power, or provides a control signal to a power drive controller indicative of the power saturation level of a storage element, in combination with the remaining claimed features.


Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hal I. Kaplan whose telephone number is 571-272-8587. The examiner can normally be reached on M-F 8:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Brian Sircus can be reached on 571-272-2800 x36. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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